

In re Application of:
Nguyen, et al.

Group Art Unit: 2823

Examiner: Khiem D. Nguyen

For: Selective Etching of
Organosilicate Films Over
Silicon Oxide Etch Stop
Layers

CERTIFICATE OF MAILING

37 CFR 1.8

I hereby certify that this correspondence is being deposited on 11/30, 2005 with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

11/30/05
Date

Signature

DECLARATION UNDER 35 C.F.R § 1.131

I, Li-Qun Xia, in support of conception and reduction to practice of claimed subject matter prior to filing of the present application on July 23, 2001, hereby declare:

1. I was a co-inventor with Huong Thanh Nguyen, Michael Scott Barnes, and Mehul Naik of the subject matter described and claimed in the present application filed on July 23, 2001 and am familiar with the disclosures and pending claims;

2. That we jointly conceived of the subject matter of all independent claims pending in this application prior to February 2, 2001, the filing date of *Gabriel et al.*;

3. That our conception of the claimed subject matter of the pending independent claims prior to February 2, 2001, is evidenced by Exhibit A, which is an invention alert disclosing the etching of organosilicate dielectric material with chemistry containing significant levels of hydrogen containing fluorocarbon gases;

4. That the invention alert shown in Exhibit A was prepared prior to February 2, 2001 and all dates masked as "DATE" in Exhibit A are prior to February 2, 2001;

5. That we diligently pursued the subject matter of the pending claims from a time beginning before February 2, 2001, until filing of the present application on July 23, 2001;


6. That we submitted the invention alert shown in Exhibit A to our in-house legal department on a date prior to February 2, 2001;

7. That our in-house legal department submitted the invention alert shown in Exhibit A to an outside legal firm for prosecution of the above identified application prior to February 2, 2001;

8. That subsequent reduction to practice of the invention occurred at latest on July 23, 2001 with the filing of the above identified application.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 11/13/2005


Li-Qun Xia

4. That the invention alert shown in Exhibit A was prepared prior to February 2, 2001 and all dates masked as "DATE" in Exhibit A are prior to February 2, 2001;

5. That we diligently pursued the subject matter of the pending claims from a time beginning before February 2, 2001, until filing of the present application on July 23, 2001;

6. That we submitted the invention alert shown in Exhibit A to our in-house legal department on a date prior to February 2, 2001;

7. That our in-house legal department submitted the invention alert shown in Exhibit A to an outside legal firm for prosecution of the above identified application prior to February 2, 2001;

8. That subsequent reduction to practice of the invention occurred at latest on July 23, 2001 with the filing of the above identified application.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: _____

Li-Qun Xia

INVENTION ALERT FORM

INVENTION ALERT FORM

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TO: Gaile Bailey
Extension:

M/S 2061
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ALERT NO: _____

Current Date:

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AIT 0723	KPU1 0166	METAL 0881	IBSS 0676	CORE 0793	COPPER 2492	OPAL
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CAP 2512	KPU8 0195	IPS *0521	SMO PUMPS 1651	GREEN 2590	LINER/ BARRIER 2492	APD 2613
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EPI 2470	CMP 1399	SMO 1659	PRP 1654		COMMON 2492	
TPO* 0584	LOWK 2445	CORE TECH 1245	300mm 2199		IMS 2492	
					BASELINE 2492	

*TPO - RTP/HTF/OXDL

**IPS - MXP/RPS/HDP

Please use separate attachments for any answers that don't fit on the form, especially for questions 3-8. If the answer to a question is "NONE", please write "NONE" rather than leaving the answer blank.

1. Title of Invention (please print clearly):

Selective Etching of Organosilicate Films Over Oxide Stop Layers

2. Inventors-Names only-(please print clearly and provide complete information at Section 9.)

Huong Thanh Nguyen

Michael Scott Barnes

Li-Qun Xia

3. Earliest dates and model names of all Applied products incorporating the invention which have been offered for sale or are expected to be offered for sale:
4. If the invention has been demonstrated or described to persons other than Applied employees, for each disclosure please provide the earliest date, name of company, a brief description of what was disclosed and the purpose of the disclosure. Attach a copy of any related non-disclosure agreements:
5. If future disclosures like those in Question #4 are expected to occur within the next 12 months, please provide the anticipated date, type of information to be disclosed, and purpose of the disclosure: NONE []
6. Describe any other known designs or processes, whether actually implemented or merely proposed in a publication, which could be considered similar to your invention or which constitute the state-of-the-art improved upon by your invention: If described in a publication, attach a copy of same or provide a citation.

7. List each feature of the invention which you consider novel and non-obvious. Describe the advantages of each novel feature in comparison with the state-of-the-art approaches which are most similar to your invention:

- a) **The use of a TEOS or silane oxide dielectric stop layer for dual damascene structure with organosilicate film as the main dielectric**
- b) **Etching of organosilicate dielectric material with chemistry containing significant levels of hydrogen containing fluorocarbon gases (pure H₂ could be added to the chemistry as well)**

8. Describe the invention, preferably with reference to attached drawings:

- a) **Construct a dual damascene structure with an organosilicate dielectric for the main film and a TEOS or silane oxide as a stop layer(s).**
- b) **Etch the main dielectric film with chemistry containing significant levels of hydrogen containing fluorocarbon gases (pure H₂ could be added to the chemistry as well)**
- c) **Etch stop layer with reduced levels of hydrogen containing fluorocarbon gases**

ATTACH ADDITIONAL SHEETS TO DESCRIBE INVENTION AS NEEDED

9. Provide the following information for **EACH** inventor:

Inventor #1:

Legal Name: Huong Thanh Nguyen - Employee # [REDACTED] Mail Stop [REDACTED]
 Work Phone [REDACTED] Fax No.: [REDACTED]
 Job Title: [REDACTED]
 Citizenship: [REDACTED]
 Home Address: [REDACTED]
 Manager: [REDACTED] Title: [REDACTED]
 Div. Manager [REDACTED] Title: [REDACTED]
 Product Group: [REDACTED] Dept #: [REDACTED]

Inventor #2:

Legal Name: Michael Scott Barnes Employee # [REDACTED] Mail Stop [REDACTED]
 Work Phone [REDACTED] Fax No.: [REDACTED]
 Job Title: [REDACTED]
 Citizenship: [REDACTED]
 Home Address: [REDACTED]
 Manager: [REDACTED] Title: [REDACTED]
 Div. Manager [REDACTED] Title: [REDACTED]
 Product Group: [REDACTED] Dept #: [REDACTED]

Inventor #3:

Legal Name: Li-Gun Xia Employee # [REDACTED] Mail Stop [REDACTED]
 Work Phone [REDACTED] Fax No.: [REDACTED]
 Job Title: [REDACTED]
 Citizenship: [REDACTED]
 Home Address: [REDACTED]
 Manager [REDACTED] Title: [REDACTED]
 Div. Manager [REDACTED] Title: [REDACTED]
 Product Group: [REDACTED] Dept #: [REDACTED]

FOR ADDITIONAL INVENTORS, PLEASE COMPLETE AND ATTACH ADDITIONAL SHEET AS NEEDED.

ADDITIONAL INVENTORS:

Inventor # :			
Legal Name:	_____	Employee # _____	Mail Stop _____
Work Phone	_____	Fax No.: _____	
Job Title:	_____		
Citizenship	_____		
Home Address	_____		
Manager:	_____	Title: _____	
Div. Manager	_____	Title: _____	
Product Group:	_____	Dept #: _____	

Inventor # :			
Legal Name:	_____	Employee # _____	Mail Stop _____
Work Phone	_____	Fax No.: _____	
Job Title:	_____		
Citizenship:	_____		
Home Address	_____		
Manager:	_____	Title: _____	
Div. Manager	_____	Title: _____	
Product Group:	_____	Dept #: _____	

Inventor			
Legal Name:	_____	Employee # _____	Mail Stop _____
Work Phone	_____	Fax No: _____	
Job Title:	_____		
Citizenship:	_____		
Home Address:	_____		
Manager	_____	Title: _____	
Div. Manager	_____	Title: _____	
Product Group:	_____	Dept #: _____	

10. Signature, date and **PRINTED** name of each inventor plus two witnesses who have read and understood this Invention Alert form:

Inventors:

Huong T. Nguyen
Printed Name

[REDACTED]
Date

[Signature]
Signature

Michael Barnes
Printed Name

[REDACTED]
Date

[Signature]
Signature

Li-Run Xia
Printed Name

[REDACTED]
Date

[Signature]
Signature

Printed Name

Date

Signature

Printed Name

Date

Signature

Printed Name

Date

Signature

Witness:

Printed Name

Date

Signature

Printed Name

Date

Signature

Return to: Gaile Bailey
Mail Stop: 2061
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